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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/691,312

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Don-Gyou Lee

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EXAMINER

BODDIE, WILLIAM

ART UNIT

PAPER NUMBER

2629

MAIL DATE

DELIVERY MODE

09/30/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/691,312	Applicant(s) LEE ET AL.	
	Examiner WILLIAM L. BODDIE	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19 and 23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In an amendment dated, September 14th, 2009 the Applicants amended claim 19 and cancelled claims 1, 7-12, 17-18 and 20. Currently claims 19 and 23 are pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on September 14th, 2009 has been entered.

Response to Arguments

3. Applicant's arguments with respect to claims 19 and 23 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yui (US 5,677,741) in view of D'Souza et al. (US 7,046,255) and further in view of McKinnon et al. (US 6,227,668).

With respect to claim 19, Yui discloses, a method of driving a display device (6 in fig. 1), comprising:

detecting a reference gray scale level of a B color to begin reducing a color reproducibility in the display device (note 21 in fig. 4; the display color space in figs. 5a-c; controller 7 determines the level at which color reproducibility is reduced col. 4, lines 26-37, 57-67);

storing a gray scale value of a gray scale level of the B color being present right before the reference gray scale level in a lookup table from the reference gray scale level to a maximum gray scale level (note the graphs in figs. 6A-C; and 9 in fig. 4);

receiving image information (1 in fig. 4) including a gray scale value corresponding to a red, green, blue color (RGB input, 1 in fig. 1) by the display device (input data in fig. 6);

determining whether the gray scale level of the B color is greater than the reference gray scale level to begin reducing the color reproducibility in the display device (col. 2, lines 43-45; also note the color space comparisons made by the controller in col. 4, lines 39-67);

applying the received image information to the display device upon a determination the gray scale level of the B color is not greater than the reference gray scale level (col. 4, line 59 - col. 5, line 11); and

compensating the received image information by analyzing a gray scale level of the B color in the received image information (clear from figs. 6a-c2 that the B color level has been analyzed and compensated), and replacing a gray scale value of the

gray scale level of the B color gray scale value in the received image information with a gray scale value of a gray scale being present right before the reference gray scale level (clipping is performed as shown in figs. 6a1-c2) retrieved from a lookup table in response to a determination that the gray scale level of the B color in the received image information is greater than the reference gray scale level (col. 4, line 57 – col. 5, line 11, details the operation when color reproducibility is a concern);

outputting a received image information including a compensated gray scale value of the gray scale level of the B color (fig. 7); and

applying the compensated image information to a display device (6 in fig. 1).

Yui does not expressly disclose that the display is an LCD display.

D'Souza discloses a LCD display (col. 4, lines 60-63) driving method compensating image information (input R,G,B in fig. 2) and that retrieval of a R and G color value (506 values in fig. 5; specifically note the clipped B values and corresponding R and G values) are in response to the determination that the B color value of the displayable color is greater than the reference gray scale level (506 in fig. 5; fig. 2; note that the data for each color is supplied to all of the filters and lookup tables. Figure 5 demonstrates that all the colors are compensated based on each other's color reproducibility); and

applying compensated image information to a plurality of data lines of the LCD device (output of 114 to 124 is the application of the compensated image information to the data lines of the disclosed LCD; col. 4, lines 60-63).

D'Souza and Yui are analogous because they are from the same field of endeavor namely, gray scale optimization within display panels.

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the image processing of Yui in an LCD taught by D'Souza.

The motivation for doing so would have been, to more accurately display colors, in a more cost effective way than using sRGB monitors (D'Souza; col. 2, lines 4-15).

Neither D'Souza nor Yui expressly disclose how the detection is carried out.

McKinnon discloses, measuring color reproducibility of a display by measuring the B color displayed on the display panel while the gray scale level of the B color is increased (col. 3, lines 20-27; specifically note step (ii)).

McKinnon, D'Souza and Yui are analogous because they are from the same field of endeavor namely, gray scale optimization within display panels.

At the time of the invention it would have been obvious to one of ordinary skill in the art to perform the detecting step in the display of D'Souza and Yui as taught by McKinnon.

The motivation for doing so would have been to precisely determine the threshold level (McKinnon; col. 3, lines 26-27).

With respect to claim 23, Yui, McKinnon and D'Souza disclose, the method of claim 19 (see above).

Yui further discloses, storing gray scale values of the 52nd to the 64th gray scale (col. 5, lines 1-5) level in the lookup table (3,9 in fig. 1).

Yui does not expressly disclose, mixing gray scale values of at least two of R, G, and B colors.

D'Souza discloses, mixing gray scale values of two colors (508 in fig. 5; specifically note the formerly solid blue (in 502) that now contains grayscale values for red in addition to the blue values, for certain blue colors.).

At the time of the invention it would have been obvious to one of ordinary skill in the art to mix gray scale values of at least two colors, as taught by D'Souza in the clipped gray scale device of Yui and McKinnon.

The motivation for doing so would have been, to more accurately display colors, in a more cost effective way than using sRGB monitors (D'Souza; col. 2, lines 4-15).

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. L. B./
Examiner, Art Unit 2629
9/30/09